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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/901,917	07/09/2001	Michael A. Walker	11675.101.1.1	8603

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EXAMINER

THOMAS, TONIAE M

ART UNIT

PAPER NUMBER

2822

DATE MAILED: 03/12/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/901,917

Applicant(s)

WALKER ET AL.

Examiner

Toniae M. Thomas

Art Unit

2822

— The MAILING DATE of this communication appears on the cover sheet with the correspondence address —

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 14 February 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 July 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 14 February 2003 has been entered. Currently, claims 1–24 are pending.

### ***Specification***

2. *The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter.* See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). The specification does not provide support for the following subject matter, which was added by amendment: growing a gate oxide on the upper surface of said semiconductor substrate such that the gate oxide extends below the upper surface of said semiconductor substrate.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

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3. *Claims 1-23 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.*

The specification does not provide support for the following subject matter, which was added by amendment: growing a gate oxide on the upper surface of said semiconductor substrate such that the gate oxide extends below the upper surface of said semiconductor substrate.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. *Claim 24 is rejected under 35 U.S.C. 102(b) as being anticipated by Lee et al. (US 5,343,354 B1)<sup>1</sup>.*

Lee et al. disclose a process for forming a capacitor (figs. 4A-4E and accompanying text). The process comprises the following steps: forming a trench 10 in a semiconductor substrate 100 (fig. 4A); forming an isolation film 101 within the trench (fig. 4A and col. 5, lines 24-27); forming a first gate stack upon the substrate, the first gate stack having an edge aligned with and adjacent to an edge of the trench (fig. 4B);

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forming a second gate stack upon the isolation film within the trench (fig. 4B); etching a container cell into the isolation film within the trench, the container cell being situated substantially between the first and second gate stacks and having an edge defined by the substrate and the isolation film, the edge of the container cell substantially extending to and terminating at each of the first and second gate stacks (fig. 4C); forming a storage node (SE) within the container cell (fig. 4D); forming a cell dielectric 20 upon the storage node (fig. 4E); and forming a cell plate PE upon the first gate stack, upon the cell dielectric, and upon the second gate stack, wherein the cell plate has an upper surface that extends into the container cell (fig. 4E).

### ***Response to Arguments***

5. Applicant's arguments with respect to claims 1-23 have been considered but are moot in view of the new ground(s) of rejection.

6. Regarding claim 24, the Applicant contends that the Lee et al. patent does not anticipate, teach or suggest the following limitation: a cell plate having an upper that extends into the container cell. As discussed above, it is the examiner's position that Lee et al. disclose a cell plate (PE) in fig. 4E, which extends into the container cell.

7. The amendment filed on 14 February 2003 has overcome the following rejections: the rejection of claims 1, 2, 6, 9, 12, 13, 15, 17, 19, 20, 22, and 23 under 35 USC §102(b), and the rejection of claims 3, 4, 5, 7, 8, 10, 11, 14, 16, 18, and 21 under 35 USC §103(a). Accordingly, the aforementioned rejections have been withdrawn.

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<sup>1</sup> The Lee et al. patent was relied upon in the Office action mailed on 28 March 2002 and in the Office

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Toniae M. Thomas whose telephone number is (703) 305-7646. The examiner can normally be reached Monday through Thursday, and alternating Fridays, from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amir Zarabian can be reached on (703) 308-4905. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3432 for regular communications and (703) 305-3432 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

*JMS*

March 9, 2003

  
AMIR ZARABIAN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800